ABSTRACT

A variety of methods of improving the dyeability and printability of fabrics comprising or consisting essentially of high tenacity fibers having a tensile breaking strength of at least about 10 g/Denier are disclosed. Such methods can result in fabrics, yarns, and/or fiber bundles having an improved ability to be dyed and/or printed with a printed pattern (e.g., a camouflage pattern), when compared to typical high tenacity fiber-based fabrics known in the prior art. The fabrics can have dyeability characteristics enabling them to be dyed with a variety of commercially relevant fabric dyes, such that the fabrics, after exposure to the dyes, are characterized by an essentially visually uniform dyed color density. In one embodiment, a dyeable fiber bundle, which can be utilized to form dyeable yarns and fabrics, which comprises at least about 5% of high tenacity fibers having a tensile breaking strength of at least about 10 g/Denier is disclosed. Also disclosed is a method for pre-washing roll stock of fabrics comprising or consisting essentially of high tenacity fibers in order to improve the level of cut, puncture, or tear resistance of the fabrics subsequent to the pre-wash and before assembly of the fabrics into articles of apparel. A variety of fabrics including high tenacity fibers having a tensile breaking strengths of at least about 10 g/Denier, as produced by or treated by such methods are also disclosed.